Kufa Journal for Nursing Sciences
Open Access Full Text Article

Publisher
University of Kufa, Faculty of Nursing

Received: 19 September, 2024
Accepted: 06 November, 2024
Published: 08 December, 2024
Vol. 14(2), 2024: 145 – 155

https://doi.org/10.36321/kjns.vi20242.17498

ORIGINAL RESEARCH

Health Problems and Health Compliance among Taxi Drivers: A Cross-Sectional Study

Blend B. Ameen

Department of Family and Community Health Nursing, College of Nursing, University of Raparin, Sulaymaniyah, Iraq.

CORRESPONDING AUTHOR: Blend B. Ameen, Department of Family and Community Health Nursing, College of Nursing, University of Raparin, Sulaymaniyah, Iraq. Email: blend.ameen@uor.edu.krd

ABSTRACT

Background: Drivers are exposed to several health risks due to their work environment, including irregular working hours, sitting for long periods, poor posture, and an unhealthy diet, in addition to stressful work environments, which are further exacerbated by the personal characteristics of drivers.
Objectives: This study aims to identify health problems and health complaints among taxi drivers.
Methodology: A cross-sectional study was conducted in Rania City. A Convenience sampling method was used to select 100 participants among 135 drivers. Sociodemographic, morbidity, and health compliance were collected from drivers. Data were gathered using a developed questionnaire and a stress-related health complaints questionnaire, through interviewing techniques.
Results: Out of 100 participant drivers, less than half 48% were found to be healthy. 9% of drivers have musculoskeletal, and 8% have eye problems. Furthermore, the study also identified that taxi drivers have unhealthy lifestyle practices regarding smoking habits, using mobile phones during driving, and obesity. Obesity accounts for 25% of the study sample. Lastly, the study shows less than half of drivers an average of 41% had moderate health complaints.
Conclusion & Recommendation: Obesity, cell phone use, and speeding up driving are more prevalent among drivers. In terms of morbidity, the taxi drivers had complaints of various health issues, such as musculoskeletal problems and eye problems. Screening tests for drivers are needed to detect actual health problems in addition to vision tests every year. Increasing awareness and providing health education is essential regarding risks associated with occupational health among drivers.

Keywords: Drivers, health problems, morbidity, health compliance, Rania city.

INTRODUCTION

Traveling by car in the Kurdistan Region is generally very simple and safe. Private cars are available but it can be expensive. Taxis are a much more economical option. It is easily available in most garages and main roads in all cities (Department of Foreign Relations – Kurdistan Regional Government. Erbil, 2020). The main form of public transportation between major cities in Kurdistan is the shared taxi, which means a taxi carrying several passengers, which is usually four people transporting them from one city to another city. The taxi drivers are those who drive a taxi for a living. They could be operators

How to Cite: Ameen, B. B. (2024). Health problems and health compliance among taxi drivers: A cross-sectional study. *Kufa Journal for Nursing Sciences, 14*(2), pp. 145-155. https://doi.org/10.36321/kjns.vi20242.17498

or owners of the car. According to directorate general of transportation in the Kurdistan Region, there are 92,207 vehicles for rent. Of these, nearly 82,000 are taxis. The rest are bus and minibus vehicles (Abdulla, 2018).

Depending on their profession of employment, taxi drivers may work mornings, nights, holidays, and weekends. Job opportunities are not few, but they are not many at once. There is independence in working as taxi drivers usually without supervision, which many people like. But at the same time drivers are exposed to many health conditions because of long working hours and the endurance of difficult environmental conditions, such as the cold winters and hot summers in the country, in addition to long periods of sitting, exposure to accidents (Murray et al., 2019), inadequate cabin comfort, exposure to airborne infections, reduced rest periods, irregular eating habits, and concern for the passengers' safety. furthermore, there are other illnesses linked to this line of work, such as musculoskeletal disorders related to the workplace, high blood pressure, asthma, heart attacks, diabetes mellitus, issues with the eyes, ears, and hearing, as well as mental health issues like stress, anxiety, and depression (Meteier et al., 2021). The health of drivers is negatively impacted by stress at work which is made worse by the personality quirks of drivers. Job-related taxi driving is quite different from conventional occupations; the drivers have ambiguous work hours and their income fluctuates daily (Bawa & Srivastav, 2013).

Research over the past few years has shown how negatively work-related stress affects one's physical health. as well as mental health, thereby raising the chance of dying young. Therefore, numerous attempts have been made to discover strategies for lessening the effect of work-related stress on an occupational level (Pavlista et al., 2021). However, the absence of documentation of health information for cab drivers, no regulation for working hours, as well as their inability to commit to time due to their work in Kurdistan, make it can be challenging to begin planning for health and wellness interventions at first. Finding practical methods to promote health and safety is necessary as the taxi workforce continues to expand, this study attempts to provide preliminary information about the health problems and health complaints among taxi drivers, through which plans and strategies can be developed to protect drivers from exposure to health problems and raise their health information.

AIMS OF THE STUDY

This study aims to identify health problems and health complaints among taxi drivers.

METHODOLOGY

Design and Setting

Descriptive design a cross-sectional study has been carried out in Ranya City from October 3, 2021 to April 13, 2022 at Rania central garage. Ranai has one big garage in which people can travel to other Kurdistan cities such as Sulaymaniyah, Erbil and Kirkuk.

Sampling, and sampling method

About 135 taxi drivers work in Rania's garage, 64 drive taxis between Rania and Sulaimani city, 61 between Rania and Erbil city, and 10 between Rania and Kirkuk city. At a confidence level of 95%, a margin of Error ±5%. and a population Proportion of 50%. 100 samples are needed. Non-probability convenience sampling method used to select 100 drivers.

The study instrument and data collection

The data collected through the utilization questionnaire. The questionnaire consisted of three parts. Part one related to the sociodemographic and driver's lifestyle behavior data which include; Age, educational statues, marital status, occupational and, smoking habits running shifts, driving hours per week, duration of working as a driver, sleeping hours per day and using mobile during driving. Part two includes information about morbidity patterns. The

third part is about stress-related health complaints among drivers. The stress-related health complaints questionnaire was adapted from (Kompier, 1996). Which include 13 questions about feeling pressure in your stomach, quickly short of breathing, feeling pain in the chest or heart region, suffering from pain in bones and muscles feeling tired, suffering from a headache, suffering from back complaints, suffering from upset stomach, suffering from a numbed feeling or a tingling sensation in your limps, tire more quickly than you would expect, feeling dizzy, feeling listless, and waking up still feeling tired. The complaints (every "Yes" score) are added up. The score ranges from 0 at the lowest point to 13 at its highest point.

Data were collected from January 2, 2022 to February 3, 2022 by Interviewing techniques. The students at 4th stage of nursing college participated to collect data. The student was knowledgeable about conducting assessments and gathering data from drivers. The students were given credit for the time they spent gathering the data as part of their learning research project.

Inclusion and exclusion criteria

- **Inclusion criteria**

1. Taxicab registered with the road transport department's garage office for a designated traffic zone.
2. Must have at least one year of driving experience
3. Drivers who accept to take part in the research.

- **Exclusion criteria**

1. Cab drivers that operate privately and are not registered with the road transport department's garage office for a certain traffic region
2. Taxi drivers who declined to take part in the research.

Validation and the data analysis

The content validity for the early tools was determined through the use of the panels of 10 experts, from different field relate to study. They were Community health nursing (2), public health (1), medical surgical Nursing (4), social psychology (1), psychiatric and mental health (1), and physiotherapist (1), to investigate the contents of the questionnaire for clarity, adequacy, and relevancy in order to achieve the present study, objectives. The experts agreed that the questionnaire was appropriately designed, constructed and they recommend few modifications. The data of present study were analyzed through the application of two statistical approaches descriptive and inferential statistics which may assist for the determination of the study results.

RESULTS

- **Drivers Socio-demographic characteristic of study sample**

A total of 100 Garage taxi drivers were interviewing in the study. 30.0 % were aged ≥ 52 years old. The majority of the drivers were primary school graduated 49%. Regarding the marital status the majority of the drivers are married 84%. half of the drivers are work in rotate shift. 44% of drivers work 10 or less than ten hours per week. In addition, 35% of the drivers are work as a driver for 10 or less than ten years Table 1.

- **Lifestyle behaviors**

Among 100 participate drivers 62% of them were smoker's, majority of them are not drinking alcohol 98%. In addition, the result shows that 75% of drivers sleep for about 7-9 hours per day and 19% sleep for ≤ 6 hours per day. 60% of drivers use mobile phone 1-3 times during driving. In addition, 70% of the drivers they drive at maximum speed 100-120 Km/hr. further more than half percent of drivers 52% were overweight and 26% of them were obesity. Lastly nearly 70% of drivers did not have information about occupational driver health hazards.

- **Morbidity Patterns among the drivers**

Table 2. Illustrated that among the 100 participant taxi drivers, 48 (48%) were found to be healthy. The morbidity patterns among the participants showed 9% of drivers have musculoskeletal and 8% of them had eye problem. 7% of drivers suffered from injuries and 5% of drivers have gastrointestinal disorder. In addition, respiratory problem, and urinary tract problem account 4%

additional 4% of drivers had hypertension with diabetic mellitus. 3% of drivers have diabetic mellitus with eye problem. Furthermore 3% of drivers have hypertension and ear problem respectively and 2% of drivers have skin allergy.

- **Stress related health complaints question**

Table 3. Shows that the mean of score was moderate compliance among taxi drivers regarding items (2,4,4,5,6,9,10 and 12), and low compliance for items (1,3,8, 9, 11, and 13). Average health complaints were at moderate level (M.S) 0.41% among taxi drivers.

- **Association between morbidity patterns among the drivers and some of sociodemographic characteristics**

The table 4. shows an association between the morbidity patterns and drivers age at level of P value ≤ 0.05. While, no association had been seen between the morbidity patterns with drivers' level of education at level, level of education, running shift, number of working hours per week, and duration of working as driver at P value > 0.05.

DISCUSSION:

The current study observed that among 100 participating drivers interviewed, 43% of them were belonged to age group of 42 years and younger and nearly half of them were primary school educated. While 62% of study sample were smokers, but majority of them were not drinking alcohol 98%. Further, the study shows more than half a percent of drivers were overweight, and nearly more than a quarter of them were obese. These results are almost similar to another study done by (Udayar et al., 2015) among public transport drivers in rural areas, in terms of smoking and obesity, but about alcohol, they are completely contradictory to the current study. They found that, of the 95 tobacco users, 68 were smokers, 27 chewers, and 110 of them drank alcohol. Moreover, they also reported that out of 204 participants, 34.8% were obese and 36.2% were pre-obese. While another study shows the prevalence of obesity using BMI were 19.0% among bus drivers in Ghana (Anto et al., 2020).

Concerning sleeping hours, the result of study shows that third percent of drivers sleep for about 7-9 hours per day which is very good but nearly twenty percent of drivers sleep for ≤ 6 hours per day this is because of half of the drivers are work in rotate shift (day and night). The long hours, the immobile nature of jobs, and the variety of work shifts increase the possibility of sleep disorders for taxi drivers (Mujawar et al., 2021). Study about sleep behavior of New York City taxi drivers observed that more than half of the taxi drivers obtained less than the recommended 7 hours of sleep per day. Inadequate shift scheduling permits drivers to work overtime during their free days or breaks. It is negatively impacts the drivers' everyday health and productivity at work and it is social life events (Ikeda et al., 2021).

Regarding drivers' behavior of using mobile during driving. About 60% of drivers use mobile phone for almost three times and 21% of them use mobile phone for more than 3 times. In addition, 70% of the drivers drive the car at maximum speed 100-120 Km/hr. The maximum speed limit set by the General Traffic Department in Kurdistan between Rania, Sulaymaniyah, Erbil, and Kirkuk is 100Km/hr. Driving more than speed limit will put the life of drivers and passengers in dangers. A review, study by (Gicquel et al., 2017), discovered that using a phone while driving is linked to unsafe driving behaviors and may be the cause of 25–50% of injury accidents. Another study by (Saifuzzaman et al., 2015), showed how using a cell phone while driving can be a major source of distraction, especially for inexperienced drivers. As a result, it is one of the main causes of motor vehicle accidents. According to the study, when drivers were talking on their phones while operating a vehicle, they were more likely to overlook important traffic signals like stop signs and traffic lights. Lastly nearly 70% of drivers did not have information about occupational driver health hazards.

Regarding health problems among drivers. The current study demonstrates different types of morbidity patterns among the involved drivers. Among 100 participated more than have some kind of health problems. The typical morbidity type being musculoskeletal problem and eye problem. Sitting for prolonged periods, incorrect positioning, and repeated motions are risk factors for musculoskeletal issues. Although (Mozafari et al., 2015), study's findings showed that musculoskeletal problems are highly prevalent among of truck drivers but this study was only 9% which may be back to that almost 70% of taxi drivers belonged to middle age group of 21-50 years of age. While eye problems attributed to extended concentration on the part of drivers while operating a work vehicle, in addition to lighting reflections during nighttime driving. In an investigation on the Impact of Vision on Driving among Spanish drivers, inadequate vision has been linked to inappropriate or ineffective illumination (Alvarez-Peregrina et al., 2021). Furthermore, this study also observed that 3% of drivers have diabetes mellitus (DM) with eye problem.

About 7% of drivers were reported to have experienced injury during their time of job. Fortunately, the accident was simple and the effect of it was not much. The occurrence of traffic accidents is often influenced by two main elements. The first is related to the driver behavior, and the second is related to the roadway design. The amount and severity of dangerous accident in Iraq are caused by inadequate traffic safety mechanisms (Al-Jameel, 2016). Regarding the manifestations of the protection stage and the lack of a coincidence reporting system or related associated substantial evidence system, such as sources of an occurrence, Kurdistan is similar to Iraq. According to data from the KRI's Ministry of Health, traffic accidents (RTAs) cause 850 fatalities and approximately

Seven percent of the drivers had hypertension in which four of them have hypertension with DM in addition five percent of drivers have gastrointestinal disorders. There are a number of causes behind those problem, but the most prevalent ones might include long and inconsistent work hours, a lack of physical activity, and the fact that over one-third of the study group is over 50 and hence at risk for hypertension, DM, and also gastrointestinal disorders. This result also support by (Ansari et al., 2013), Based on a survey conducted among Bangalore Metropolitan Transport Corporation (BMTC) Employees, the study revealed similar results about the occurrence of hypertension (14.02%). In addition, In another study of cardiovascular risk factors among rural public transportation drivers (Udayar et al., 2015), found that 14.21% of drivers had hypertension. (Izadi et al., 2013) Reported that Hyperglycemia affected 52.1% of the drivers, 9.1% of them were in diabetic stage while, (Tamilarasan, M., Kulothungan, K., Rizvana, S., Thirunavukkarasu, S., Muniyapillai, T. and Kulothungan Sr, 2023), which they show about 11.9%. of drivers had Type 2 Diabetes Mellitus.

4% of participant have respiratory problem. The transportation drivers are among the several jobs where laborers are subjected to pollen and other airborne particles (Ferkol & Schraufnagel, 2014). Further drivers on external roads are constantly exposed to cold air from the car's air conditioning which may lead to respiratory infection or problems.

Urinary tract issue is one of the problems that drivers have it. The current study shows four percentage of taxi drivers have urinary tract infection. Uhunmwangho et al., 2014, showed in their study that (7.5%) of drivers had asymptomatic UTIs with a higher occurrence among those aged 35 - 45 years (Uhunmwangho E J ; et al., 2014). Along with other professional drivers, taxi drivers are susceptible to genitourinary disorders such as infertility, urolithiasis, bladder cancer, and voiding dysfunction, which is also known as "taxi cab syndrome" (Mass et al., 2014). Moreover, since taxi drivers might not always have access to a restroom, the effects of LUTS on their quality of life are distinct (Li Marzi et al., 2023).

Regarding the ear problem among drivers account 3%. This result is inconsistent with the study was done in Iran shows the prevalence of bilateral noise-induced hearing loss (NIHL) was 18.1% (Janghorbani et al., 2009). They stated Long-distance drivers' occupational health issues have not gotten much attention in developing nations. This demographic may be at risk for hearing loss due to noise exposure (Borchgrevink HM., 2003).

In addition to health problem the researcher wanted to observe the stress related health compliance too in order to illustrate the whole pictures of drivers' health problem related to diving. The results of table (3) shows that the item (12) obtains the highest mean of score (0.63) which states that occasionally feel listless? (63.0 %) of subject answer they have, (37.0%) of subject answer don't have feeling of listless. And feeling of tired Item 6 is coming at the second highest compliance among drivers in which 0.62% of participated complained from it. This finding is supported by (Rad et al., 2024), They stated that taxicab drivers and other professional drivers are more likely to experience driver tiredness. Because they frequently experience sleep deprivation, circadian rhythm failure, and extended durations of driving under duress. Furthermore item (10) shows that half percentage of drivers got tired quickly. Being able to drive requires quick thinking and constant focus. While item (3) obtains low mean of score (0.22), which is about infrequently experiencing pain in the chest or heart area. This is expected while only few numbers of the study sample have health related cardiovascular diseases such as hypertension in this study.

The prevalent of feeling headache and dizziness was 0.34% and 0,25 respectively. There are several reasons behind that such a long hour of working specially at night, not sleeping well and getting tired as the result of this study found more than half of driver are feeling tired. Research has indicated that shift jobs had a higher likelihood of experiencing migraine and indefinable headaches compared to day workers (Appel et al., 2020). Which are usually connected to problems with sleep (Liu et al., 2019). Finally, the study identifies also that 28% of drivers suffered from upset stomach and 32% feel pressure on their stomach.

In general, the result of driver's stress-related health compliance is adequately acceptable the average (0.41). Working as a taxi driver is often difficult. They work every day of the week during the day or night and sometimes without a suitable place to rest. In addition to the intense and repetitive daily work routine in the work environment. This could be a source of stress on overall health. Maintaining this practice might make people feel more stressed and lead to physical, psychological, and/or other changes that eventually lead to a decline in their quality of life and health (Cidreira et al., 2023).

Finally, this study found a significant relationship between age and morbidity patterns. According to this result, the percentage of people in older age groups who exhibited a morbidity pattern was larger than that of those in younger age groups. Age has an influence on working conditions, so management must think about how to reduce number of working hours to lower risk. Age is the most critical issue that directorate general of transportation should assess abilities of drivers and try to talk with them about what may the work arise health problems and try to make them aware of it. In the meantime, the study found no association between the morbidity pattern and the running shift, number of working hours per week, level of education, or length of time spent working as a driver (P value > 0.05). People who worked fewer than 10 hours per week, had been drivers for fewer years, and worked rotational shifts also had lower rates of morbidity. In contrast a study regarding morbidity profile of transport sector workers, shows long work hours were found to be positively correlated with health issues. Additionally, it was discovered that those with over five years of working in the transportation industry had the highest incidence of medical complaints (Shetty et al., 2016).

CONCLUSIONS & RECOMMENDATIONS:

Most of drivers had bad behavior relating using mobile phone during driving, less sleeping hours per day in addition speed. Obesity was more prevalent in addition to musculoskeletal problems and eye problems. While 20% of study sample were in range of severe health compliance but stress-related overall related health compliance was is at moderate level which is adequately acceptable. Providing health education and drivers relate health awareness is necessary for taxi drivers. Screening tests are needed for drivers to detect actual health problems in addition vision actual tests should be done every year for checking drivers' visions.

- **Limitations of the study**

Because the study was contextual, it couldn't generalize its findings to the taxi driver sector as a whole.

- **Funding**

There was no funding provided for this study.

- **Author contribution**

Scientific concept, Manuscript conceptualization, Manuscript writing, helping in data collection, Data analysis and the interpretation of the data, Method and designing, St literature review, data collection data

- **Declaration of Competing interest**

Concerning this paper's study and publishing, the author disclosed no potential conflicts of interest.

- **Acknowledgments**

The ethical guidelines of the university research center were followed in conducting this study. Students were informed of the nature and purpose of the study, as well as details of its conduct and ethical considerations, through the creation and distribution of a study information note. The student knew how to collect information from drivers and conduct assessments. As part of their educational research project, students received credit for the time they spent obtaining data.

- **Inform Consent:** The informed consent of every driver involved was obtained.

REFERENCES:

Abdulla, R. (2018). Officials concerned over more than 90k taxis on Kurdistan roads. Rudaw.Net, 1–5. https://www.rudaw.net/english/kurdistan/250120181#:~:text=There are over 92%2C000 taxis in the Kurdistan Region.

Al-Jameel, H. A. (2016). Reducing the Number of Accidents in Iraq by Using Expert System. *Journal of Babylon University/Engineering Sciences*, 24, 1099.

Alvarez-Peregrina, C., Martinez-Perez, C., Villa-Collar, C., & Sánchez-Tena, M. Á. (2021). Influence of vision on drivers: A pilot study. *International Journal of Environmental Research and Public Health*, 18(22). https://doi.org/10.3390/ijerph182212116.

Ansari, A. H., Zulkifle, M., & Shakir, M. (2013). Employees of Bangalore Metropolitan Transport Corporation (BMTC)A Study of Prevalence of Hypertension in. *Hamdard Medicus*, 56(3), 55–57.

Anto, E. O., Owiredu, W. K. B. A., Adua, E., Obirikorang, C., Fondjo, L. A., Annani-Akollor, M. E., Acheampong, E., Asamoah, E. A., Roberts, P., Wang, W., & Donkor, S. (2020). Prevalence and lifestyle-related risk factors of obesity and unrecognized hypertension among bus drivers in Ghana. Heliyon, 6(1), e03147. https://doi.org/10.1016/j.heliyon.2019.e03147.

Appel, A. M., Török, E., Jensen, M. A., Garde, A. H., Hansen, Å. M., Kaerlev, L., Grynderup, M. B., & Nabe-Nielsen, K. (2020). The longitudinal association between shift work and headache: results from the Danish PRISME cohort. *International Archives of Occupational and Environmental Health*, 93(5), 601–610. https://doi.org/10.1007/s00420-019-01512-6.

Bawa, M. S., & Srivastav, M. (2013). Study the epidemiological profile of taxi drivers in the background of occupational environment, stress and personality characteristics. *Indian Journal of Occupational and Environmental Medicine*, 17(3), 108–113. https://doi.org/10.4103/0019-5278.130855.

Borchgrevink HM. (2003). Does health promotion work in relation to noise? Noise Health, 5(18), 25-30. PMID: 12631433.

Cidreira, L. C. S., Teixeira, J. R. B., & Mussi, F. C. (2023). Perceived stress by mototaxi drivers and its relationship with sociodemographic and occupational characteristics. *Revista Brasileira de Enfermagem*, 76(4), 1–9. https://doi.org/10.1590/0034-7167-2022-0505.

Department of Foreign Relations – Kurdistan Regional Government. Erbil, K. R. (2020). Department of Foreign Relations Kurdistan Regional Government. *Local Transport* (pp. 11–12). available: https://archive.gov.krd/dfr/dfr.gov.krd/p/p89da.html?p=115&l=12&r=367.

Ferkol, T., & Schraufnagel, D. (2014). The global burden of respiratory disease. *Annals of the American Thoracic Society*, 11(3), 404–406. https://doi.org/10.1513/AnnalsATS.201311-405PS.

Gicquel, L., Ordonneau, P., Blot, E., Toillon, C., Ingrand, P., & Romo, L. (2017). Description of various factors contributing to traffic accidents in youth and measures proposed to alleviate recurrence. *Frontiers in Psychiatry*, 8(JUN), 1–10. https://doi.org/10.3389/fpsyt.2017.00094.

Ikeda, H., Minami, S., Richards, K., & Nakaseko, M. (2021). Adverse effects of night shift work on mental and physical fatigue of taxi drivers. *Journal of Global Tourism Research*, 6(1), 73–78. https://doi.org/10.37020/jgtr.6.1_73.

Izadi, N., Malek, M., Aminian, O., & Saraei, M. (2013). Medical risk factors of diabetes mellitus among professional drivers. *Journal of Diabetes and Metabolic Disorders*, 12(1), 1. https://doi.org/10.1186/2251-6581-12-23.

Janghorbani, M., Sheikhi, A., & Pourabdian, S. (2009). The prevalence and correlates of hearing loss in drivers in Isfahan, Iran. *Archives of Iranian Medicine*, 12(2), 128–134.

Kompier, M. A. (1996). Bus drivers : Occupational stress and stress prevention Department of Work and Organizational Psychology. In ILO International Labour Officemanual for bus drivers Geneva: (p. 23). http://www.ilo.int/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_250105.pdf.

Li Marzi, V., Musco, S., Lombardo, R., Cicione, A., Gemma, L., Morselli, S., Gallo, M. L., Serni, S., Campi, R., De Nunzio, C., Albisinni, S., De Cillis, S., Geretto, P., Pellizzari, L., Sampogna, G., & Vacca, L. (2023). Prevalence of lower urinary tract symptoms in taxi drivers: a cross-sectional web-based survey. *Prostate Cancer and Prostatic Diseases*, 1–13. https://doi.org/10.1038/s41391-023-00777-w.

Liu, H., Liu, J., Chen, M., Tan, X., Zheng, T., Kang, Z., Gao, L., Jiao, M., Ning, N., Liang, L., Wu, Q., & Hao, Y. (2019). Sleep problems of healthcare workers in tertiary hospital and influencing factors identified through a multilevel analysis: A cross-sectional study in China. *BMJ Open*, 9(12), 1–11. https://doi.org/10.1136/bmjopen-2019-032239.

Mass, A. Y., Goldfarb, D. S., & Shah, O. (2014). Taxi cab syndrome: a review of the extensive genitourinary pathology experienced by taxi cab drivers and what we can do to help. *Reviews in Urology*, 16(3), 99–104. https://doi.org/10.3909/riu0627.

Meteier, Q., Capallera, M., Ruffieux, S., Angelini, L., Abou Khaled, O., Mugellini, E., Widmer, M., & Sonderegger, A. (2021). Classification of Drivers' Workload Using Physiological Signals in Conditional Automation. *Frontiers in Psychology*, 12(February), 1–18. https://doi.org/10.3389/fpsyg.2021.596038.

Mohankumar, P., Gopalakrishnan, S., & Muthulakshmi, M. (2018). Morbidity profile and associated risk factors among construction workers in an urban area of Kancheepuram district, Tamil Nadu, *India. Journal of Clinical and Diagnostic Research*, 12(7), LC06–LC09. https://doi.org/10.7860/JCDR/2018/34678.11773.

Mozafari, A., Vahedian, M., Mohebi, S., & Najafi, M. (2015). Work-related musculoskeletal disorders in truck drivers and official workers. *Acta Medica Iranica*, 53(7), 432–438.

Mujawar, I., Leng, J., Roberts-Eversley, N., Narang, B., Kim, S. Y., & Gany, F. (2021). Sleep behavior of New York City taxi drivers compared to the general US population. *Journal of Transport and Health*, 22, 1–20. https://doi.org/10.1016/j.jth.2021.101237.

Murray, K. E., Buul, A., Aden, R., Cavanaugh, A. M., Kidane, L., Hussein, M., Eastman, A., & Checkoway, H. (2019). Occupational health risks and intervention strategies for US taxi drivers. *Health Promotion International*, 34(2), 323–332. https://doi.org/10.1093/heapro/dax082.

Pavlista, V., Angerer, P., & Diebig, M. (2021). Barriers and drivers of psychosocial risk assessments in German micro and small-sized enterprises: a qualitative study with owners and managers. *BMC Public Health*, 21(1), 1–12. https://doi.org/10.1186/s12889-021-11416-1.

Rad, E. H., Hosseinnia, M., Mousavi, N., Shekari, A., Kouchakinejad-Eramsadati, L., & Khodadadi-Hassankiadeh, N. (2024). Fatigue in taxi drivers and its relationship with traffic accident history and experiences: a cross-sectional study in the north of Iran. *BMC Public Health*, 24(1), 1–9. https://doi.org/10.1186/s12889-024-18044-5.

Rudaw. (2017). Traffic Accidents Leading Cause of Death in the Kurdistan Region. 8–11. https://www.rudaw.net/english/kurdistan/29042017.

Saifuzzaman, M., Haque, M. M., Zheng, Z., & Washington, S. (2015). Impact of mobile phone use on car-following behaviour of young drivers. *Accident Analysis and Prevention*, 82, 10–19. https://doi.org/10.1016/j.aap.2015.05.001.

Shetty, K., Prabhu, S., DCunha, D., DSouza, O., Suvarna, A., & Jacob, B. (2016). Morbidity profile of transport sector workers and its correlation with social and work factors. *International Journal of Medical Science and Public Health*, 5(10), 2030. https://doi.org/10.5455/ijmsph.2016.12022016407.

Tamilarasan, M., Kulothungan, K., Rizvana, S., Thirunavukkarasu, S., Muniyapillai, T. and Kulothungan Sr, K. (2023). A Cross-Sectional Study of Determinants of Type 2 Diabetes Mellitus Among Professional Drivers in the Perambalur Municipality Area of Tamil Nadu, India. *Cureus*, 15(1), 1–11. https://doi.org/10.7759/cureus.34321.

Topal, S. (2011). Occupational injuries and occupational safety and health regulations in three industries in North Cyprus, opportunities for improvement identified. September.

Udayar, S., Sampath, S., D., A., & Sravan, S. (2015). Epidemiological study of cardiovascular risk factors among public transport drivers in rural area of Chittoor district of Andhra Pradesh. *International Journal of Community Medicine and Public Health*, 2(4), 415–420. https://doi.org/10.18203/2394-6040.ijcmph20150778.

Uhunmwangho E J ;, Blackies, H. O. T. ;, Omoregbe, F. I. ;, Okhia, O., Eruotor, & Uhunmwangho, A. (2014). Urinary tract infection among apparently healthy commercial transport workers in Ekpoma and its environs within Edo State, *Nigeria. Ajol.Info*, 3(3), 106–111. https://www.ajol.info/index.php/ijbair/article/view/116986.

TABLES:

Table (1): Distribution of 100 drivers by their age, level of education, marital status, running shift, number of working hours per week, and duration of working as driver.

Demographic data		Frequency	Percentage
Age	22-31	18	18
	32-41	25	25
	42-51	27	27
	≥ 52	30	30
Mean ± SD		**44.6±12.86**	
Level of education	Illiterate	8	8
	Primary school graduated	49	49
	Secondary graduated	22	22
	Intermediate school graduated	7	7
	Institute/College graduated	14	14
Marital state	Single	14	14
	Married	84	84%
	Widowed	2	2%
Running shift	Morning	50	50
	Rotation shift	50	50
Number of working hours per week	≤ 10	44	44
	11-20	25	25
	21-30	10	10
	More than 30	21	21
Duration of working as driver	1-10	35	35
	11-20	30	30
	21-30	15	15
	More than 30	20	20

Table (2): Morbidity patterns among 100 drivers

Morbidity pattern among deriver	Frequency	Percentage
None	**48**	**48**
Musculoskeletal system	**9**	**9**
Eye problem	**8**	**8**
Injury	**7**	**7**
Gastrointestinal disorder	**5**	**5**
Respiratory problem and	**4**	**4**
Urinary tract problem	**4**	**4**
Hypertension with Diabetic Mellitus	**4**	**4**
Diabetic Mellitus with Eye problem	**3**	**3**
Hypertension	**3**	**3**
Ear problem	**3**	**3**
Skin problem (allergy)	**2**	**2**
Total	**100**	**100%**

Table (3): Health complaints among 100 participant drivers

Health complaints question	Yes		No		M.S	S
	F	P	F	P		
Do you occasionally feel pressure in your stomach or is it ever swollen?	32	32	68	68	0.32	L
Are you quickly short of breath?	34	34	66	66	0.34	M
Do you occasionally feel pain in the chest or heart region?	22	22	78	78	0.22	L
Do you occasionally suffer pain in bones and muscles?	52	52	48	48	0.52	M
Do you frequently feel tired?	62	62	38	38	0.62	M
Do you occasionally suffer from a headache?	55	55	45	45	0.55	M
Do you occasionally suffer from back complaints?	43	43	57	57	0.43	M
Do you occasionally suffer from upset stomach?	28	28	72	72	0.28	L
Do you ever suffer from a numbed feeling or a tingling sensation in your limps?	46	46	54	54	0.46	M
Do you tire more quickly than you would expect?	50	50	50	50	0.5	M
Do you occasionally feel dizzy?	25	25	75	75	0.25	L
Do you occasionally feel listless?	63	63	37	37	0.63	M
Do you generally wake up still feeling tired?	32	32	68	68	0.32	L
					0.41	**M**

F= Frequency, P= Percentage, M.S= Mean of Score, S= Severity, L.C=Low Compliance = 44%, M.C=Moderate Compliance = 36% , S.C= Sever Compliance= 20%.

Table (4): Association between morbidity patterns and some of sociodemographic characteristics

Sociodemographic characteristic		Total No.	Morbidity pattern		X^2/Fisher test	(P. Value)
			Yes	No	Value	Significance
			F. (%)	F. (%)		
Age	22 - 31	18	9 (9)	9 (9)	8.313	< 0.04 S
	32 - 41	25	10 (10)	15 (15)		
	42 - 51	27	11 (11)	16 (15)		
	≥ 52	30	22 (22)	8 (8)		
Level of Education	Illiterate	3	3 (3)	5 (5)	2.868	0.58 NS
	Primary school graduated	50	30 (30)	20 (20)		
	Secondary school graduated	50	22 (13)	28 (28)		
	Intermediate school graduated	41	2 (2)	7 (7)		
	Institute/College graduated	56	7 (7)	5(5)		
Running shift	Morning	50	12 (70.6)	5 (29.4)	2.564	0.080 NS
	Rotation shift	50	87 (54.0)	74 (46.0)		
Number of working hours per week	≤ 10	44	24 (24)	20 (20)	1.074	0.783 NS
	11 - 20	25	13 (13.0)	12 (12.0)		
	21 - 30	10	6 (9.0)	4 (4.0)		
	More than 30	21	9 (9.0)	12 (12.0)	28.154	
Duration of working as driver	1 - 10	35	15 (15.0)	20 (20.0)		
	11 - 20	30	15 (15.0)	15 (15.0)	3.026	0.388 NS
	21 - 30	15	10 (10.0)	5 (5.0)		
	≥ 31	20	12 (12.0)	8 (8.0)		

X^2 value =Chi squire test, P. Value <0.05, taken as significance, HS= Highly significance, NS= No significance.